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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,417	10/31/2003	Shivkumar Mahadevan	VTN 5023	2097

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EXAMINER

DRODGE, JOSEPH W

ART UNIT PAPER NUMBER

1723

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/699,417

Applicant(s)

MAHADEVAN ET AL.

Examiner

Joseph W. Drodge

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>0605</u> . | 6) <input type="checkbox"/> Other: ____. |

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3,5,10-13,19 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Kunzler et al PG PUBS Document US2004/0176628. Kunzler et al disclose removal of an impurity phase from silicone using supercritical fluid (paragraph 2, etc.). Carbon dioxide is employed (page 1, 2nd column) per claims 2 and 3. There are at least 2 stages of treatment beginning with a lower pressure/higher density stage and higher pressure/lower density stage (page 1, 2nd column, paragraph 6 and page 2, paragraph 18) per claim 5. Prepolymer monomers or oligomers are treated at paragraph 4 per claims 12,13,19 and 20. The recited temperatures and pressures of claims 10 and 11 are given at paragraphs 6 and in the Examples per claims 10 and 11.

Claims 1-3,10-13,19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Bawa et al patent 6,071,439. Bawa et al disclose removal of an impurity phase from silicone using supercritical fluid (especially column 2, lines 16-56). Carbon dioxide is employed (column 2, lines 16-25) per claims 2 and 3. There are at least 2 and up to 4 stages of treatment (see for instance column 7, lines 3-5 and Example 3 at column 8, lines 43-45) per claim 5. Prepolymer monomers or oligomers are treated at

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column 3, lines 4-49 per claims 12,13,19 and 20. The recited temperatures and pressures of claims 10 and 11 are given at column 2, lines 43-49 and in the various Examples per claims 10 and 11.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunzler et al PGPUBS Document US2004/0176628. Claims 4 and 6 differ in explicit recitation of density values between 0.4 and 0.8 g/ml. Kunzler discloses large changes in density occurring by altering pressures or addition of co-solvents at paragraph 6. It would have been obvious to one of ordinary skill in the art to have performed the Kunzler process with carbon dioxide at the claimed density values, by routine optimization of temperatures or pressures or co-solvent addition, in order to remove specific contaminants at various stages of silicone production (see also paragraph 4).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bawa et al patent 6,071,439. Claim 4 differs in explicit recitation of density values between 0.4 and 0.8 g/ml. Bawa et al discloses large changes in density occurring by altering pressures or temperatures or addition of co-solvents and at various stages of silicone processing at column 2, lines 43-49 and column 4, lines 63-67. It would have been obvious to one of ordinary skill in the art to have performed the Bawa et al process with carbon dioxide at the claimed density values, by routine optimization of temperatures or pressures or co-solvent addition, in order to remove specific contaminants at various stages of silicone production.

Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bawa et al patent 6,071,439 in view of Kunzler et al PGPUBS Document

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US2004/0176628. Bawa et al disclose at least 4 contacting stages of supercritical carbon dioxide treatment (column 7, lines 1-5). The claims differ in requiring successively lower densities from stage to stage and reciting particular densities in the range of from 0.1 to about 0.8 g/ml. Kunzler et al teach raising pressures of the carbon dioxide extracting fluid with resulting lowering of densities, as well as capacity to rapidly and widely vary densities by varying pressures, temperatures and presence of co-solvents (paragraphs 6 and 18). It would have been obvious to one of ordinary skill in the art to have gradually lowered the densities and increased the pressures of the applied carbon dioxide in the Bawa et al process, as taught by Kunzler, so as to remove different types of contaminants and unreacted monomers separately in separate processing stages of the silicone. The claimed densities would result from routine optimization of temperatures, pressures and co-solvent addition as also taught by Kunzler.

Claims 14-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Bawa et al patent 6,071,439 or Kunzler et al PGPUBS Document US2004/0176628 in view of any of: Bambury et al patent 5,070,215; Lai et al patent 5,034,461; Su et al patent 4,070,533 or Deichert et al patent 4,153,641. Claims 14-18 and 20 differ from Bawa et al and Kunzler in the particular silicone monomers and polymers recited. However, Bawa et al disclose applying of the process to any conventional silicone monomers (column 3, lines 4-49) while Kunzler also is applicable to any commercial silicone monomer process (paragraph 4). Each of '215, '461, '533 and '641 recite a wide range of the claimed monomers and polymers in the respective

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detailed descriptions. It would have been obvious to one of ordinary skill in the art to have applied the Bawa et al or Kunzler et al process to the claimed monomers and polymers taught by '215, '461, '533 or '641, since Bawa et al and Kunler et al disclose the supercritical fluid extraction process for removing impurities being applicable to any silicone material at any stage of production.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Drodge at telephone number 571-272-1140. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached at 571-272-1151. The fax phone number for the examining group where this application is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR, and through Private PAIR only for unpublished applications. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

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have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWD

January 6, 2006


JOSEPH DRODGE
PRIMARY EXAMINER